In the Claims:

1. (Currently amended): A method for increasing the fatigue life, in particular the bending fatigue life and the torsional fatigue life of crankshafts, in particular of large crankshafts, by local hammering of highly loaded areas, such as grooves, hole mouths and cross-sectional junctions, by means of pulsed-pressure machines or striking apparatuses which introduce intrinsic compressive stresses into the crankshaft via striking tools, characterized in that the pulsed-pressure apparatuses or striking machines ~~(1)~~ carry out only a relative movement on a plane at right angles to the surface of the crankshaft segment at the time at which the compressive stress is introduced between the striking tool ~~(14)~~ and the crankshaft segment to be processed, with the crankshaft ~~(4)~~ being rotated continuously during the processing, and in that the time during which the striking tool ~~(14)~~ is acting and the striking pressures are chosen such that, when the striking tool ~~(14)~~ strikes the crankshaft segment to be processed while the intrinsic compressive stresses are being introduced, the rotational movement of the crankshaft ~~(4)~~ is necessarily stopped.

2. (Currently amended): The method as claimed in claim 1, characterized in that the striking frequency of the striking tool ~~(14)~~ is between 0.1 and 20 Hz.

3. (Currently amended): The method as claimed in claim 2, characterized in that the striking frequency of the striking tool ~~(14)~~ is between 1 and 10 Hz.

4. (Currently amended): The method as claimed in claim 3, characterized in that the striking frequency of the striking tool ~~(14)~~ is between 3 and 6 Hz.

5. (Currently amended): The method as claimed in claim 1, characterized in that the striking pressures of the striking tool ~~(14)~~ are between 10 and 300 bar.

6. (Currently amended): The method as claimed in claim 5, characterized in that the striking pressures of the striking tool ~~(14)~~ are between 30 and 130 bar.

7. (Currently amended): The method as claimed in claim 6, characterized in that the striking pressures of the striking tool ~~(14)~~ are between 50 and 110 bar.

8. (Original): The method as claimed in one of claims 1 to 7, characterized in that the temperature in the region of the crankshaft segment to be processed is less than 65°C.

9. (Original): The method as claimed in claim 8, characterized in that the temperature in the region of the crankshaft segment to be processed is between 12 and 25°C.

10. (Currently amended): The method as claimed in claim 1, characterized in that the intrinsic compressive stresses are introduced by means of the striking tools ~~(14)~~ on crankshafts ~~(4)~~ which have already previously been processed by a method for increasing the fatigue-life characteristics.

11. (Currently amended): The method as claimed in claim 10, characterized in that the intrinsic compressive stresses are introduced by the striking tools ~~(14)~~ after induction hardening of the crankshaft ~~(4)~~.

12. (Currently amended): The method as claimed in one of claims 1 to 11, characterized in that, once the intrinsic compressive stresses have been introduced by the striking tools ~~(14)~~, the intrinsic compressive stresses close to the surface are reduced by machining away the surface of the crankshaft segment to be processed.

13. (Original): The method as claimed in claim 12, characterized in that up to 3 mm of the surface of the processed crankshaft segment is removed.

14. (Original): The method as claimed in claim 13, characterized in that between 0.3 and 2 mm of the surface of the processed crankshaft segment is removed.

15. (Original): The method as claimed in claim 12, 13 or 14, characterized in that the removal is carried out by grinding, turning or milling.

16. (Currently amended): The method as claimed in one of claims 1 to 15, characterized in that, in one refinement of the crankshaft segment to be processed, and which is in the form of a catenary, the continuous junction radii which are in the form of an initial contour are compressed by the introduction of the intrinsic compressive stresses via the striking tools ~~(14')~~, and the junction radii are then processed to the required final contour, as a catenary shape, by a method for removing material from the surface.

17. (Currently amended): The method as claimed in one of claims 1 to 16, characterized in that, in one refinement of the crankshaft segment to be processed and in the form of a catenary, the striking tools ~~(14)~~ are provided with the desired catenary shape.

18. (Currently amended): The method as claimed in claim 17, characterized in that the catenary shape of a striking tool ~~(14)~~ is formed on a plane which extends in the longitudinal direction of the crankshaft ~~(4)~~, while a spherical shape is formed on a plane at right angles to the longitudinal direction.

19. (Currently amended): The method as claimed in one of claims 1 to 18, characterized in that the pulsed-pressure apparatuses or striking machines ~~(1)~~ are each aligned with their longitudinal axes in the striking direction, and in that the intrinsic compressive stresses are introduced by in each case only one striking tool ~~(14)~~, which is arranged in the associated pulsed-pressure apparatus or striking machine ~~(1)~~.

20. (Currently amended): An apparatus for carrying out the method as claimed in claims 1 to 19 by means of a pulsed-pressure machine or striking apparatuses, which pulsed-pressure machine is provided with striking tools and with a transmission for rotation of the crankshaft, characterized in that the transmission ~~(3')~~ is provided with a continuous drive ~~(6)~~ for rotational movement of the crankshaft ~~(4)~~, in which case the drive system can be stressed in a sprung manner.